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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,850	01/24/2001	Miguel Peeters	Q62670	3360
7590 12/10/2004			EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue N.W. Washington, DC 20037-3213			WANG, TED M	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/767,850

Applicant(s)

PEETERS ET AL.

Examiner

Ted M Wang

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 and 10 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Specification

2. The disclosure is objected to because of the following informalities:
 - On page 1, lines 2 and 4, page 2 lines 9 and 10, page 3 lines 12, 20, and 29, and page 4 lines 5-6 and 10-11, the examiner suggests incorporating the features recited in claims 1-9 into the specification to facilitate potential further amendments of the claims. In the specification, without explicitly reciting the features recited in the original claims 1-9, amendments to the claims may provoke 35 USC 112, first paragraph rejection because any amendment would potentially introduce new matter.Appropriate correction is required.

Claim Objections

3. Claims 2 and 4 are objected to because of the following informalities:
 - With claims 1-10, replace "CHARACTERISED IN THAT" to – wherein --.Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 6,549,512) in view of Yamano et al. (US 6,445,731).

- With regard claim 1, Wu et al. discloses that a constellation information transmitting arrangement for use in a multi-carrier transmitter or multi-carrier receiver of a multi-carrier system (Fig.6, column 1 lines 17-27, and column 5 line 63 –column 6 line 5), said arrangement comprising means for producing carrier constellation information indicative for constellations where respective carriers will be modulated with by said multi-carrier transmitter (Fig.6, column 1 lines 17-27, and column 5 line 63 –column 6 line 5), and means for transmitting said carrier constellation information (column 5 line 63 –column 6 line 44),
CHARACTERISED IN THAT said means for producing carrier constellation information is adapted to produce for at least one respective carrier subset (column 6 lines 6-44, column 18 line 54 – column 19 line 13).

Wu et al. discloses all of subject matter as described above except for specifically teaching a set of parameter from which constellations of all carriers in said at least one respective carrier subset can be retrieved through interpolation. However, Yamano et al. teaches a QAM receiver that receive a set of parameter from which constellations of all carriers in said at least one respective carrier

subset can be retrieved through interpolation (Fig.3 elements 302 and 304, column 7 lines 41-67, and column 11 lines 1-67). It is desirable to have an interpolation process at the QAM or multi-carrier receiver side to retrieve the respective carrier subset in order to improve the timing synchronization and carrier recovery accuracy. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Yamano et al. in which, having an interpolation process at the QAM or multi-carrier receiver side to retrieve the respective carrier subset, into Wu's so as to improve the timing synchronization and carrier recovery accuracy.

- With regard claim 2, Wu et al. further discloses the limitation that a set of parameter values consists of a first number of bits and a first gain value (column 6 lines 1-44).
- With regard claim 3, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 4, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application in view of Yamano et al. (US 6,445,731).

- In regard claim 7, the admitted prior art of the instant application teaches the Constellation information receiving arrangement for use in a multi-carrier transmitter or multi-carrier receiver of a multi-carrier system, said arrangement

comprising means for receiving carrier constellation information indicative for constellations where respective carriers will be modulated with by said multi-carrier transmitter, and means for determining said constellations from said carrier constellation information (page 1 line 7 – page 2 line 4).

The admitted prior art of the instant application teaches all of subject matter as described above except for specifically teaching CHARACTERISED IN THAT said means for determining said constellations comprise interpolating means adapted to retrieve constellations of all carriers in at least one respective carrier subset from a respective set of parameter values that forms part of said carrier constellation information.

However, Yamano et al. teaches a QAM receiver that receive a set of parameter from which constellations of all carriers in said at least one respective carrier subset can be retrieved through interpolation (Fig.3 elements 302 and 304, column 7 lines 41-67, and column 11 lines 1-67). It is desirable to have an interpolation process at the QAM or multi-carrier receiver side to retrieved the respective carrier subset in order to improve the timing synchronization and carrier recovery accuracy. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Yamano et al. in which, having an interpolation process at the QAM or multi-carrier receiver side to retrieved the respective carrier subset, into Wus' so as to improve the timing synchronization and carrier recovery accuracy.

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- With regard claim 8, the limitation that a set of parameter values consists of a first number of bits and a first gain value and in that said interpolating means is adapted to determine for each carrier in said at least one respective carrier a number of bits equal to said first number and a gain value equal to said first gain value can further be taught in page 1 lines 7-31.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 6,549,512) and Yamano et al. (US 6,445,731) as applied to claim 1 above, and further in view of section 9 of the ADSL Standard Specification Release 2 entitled 'Network and Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface', published by the American National Standards Institute (ANSI) under the reference ANSI T1.413-1998.

- With regard claim 5, Wu et al. and Yamano et al. disclose all subject matter as described above except for specifically teaching that the arrangement further contains means to produce a description of said at least one respective carrier subset, and means to transmit said description of said at least one respective carrier subset.

However, the section 9 of the ADSL Standard Specification Release 2 entitled 'Network and Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface', published by the American National Standards Institute (ANSI) under the reference ANSI T1.413-1998 teaches that the arrangement further contains means to produce a description of said at least one respective carrier subset, and means to transmit said description of said at least

one respective carrier subset (section 9.8.13, pages 120-121) in order to improve the transceiver initialization. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the apparatus as taught by the section 9 of the ADSL Standard Specification Release 2 entitled 'Network and Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface', published by the American National Standards Institute (ANSI) under the reference ANSI T1.413-1998 in which, the arrangement further contains means to produce a description of said at least one respective carrier subset, and means to transmit said description of said at least one respective carrier subset, into Wu and Yamanos' receiving arrangement teaching in order to improve the transceiver initialization.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application and Yamano et al. (US 6,445,731) as applied to claim 7 above, and further in view of section 9 of the ADSL Standard Specification Release 2 entitled 'Network and Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface', published by the American National Standards Institute (ANSI) under the reference ANSI T1.413-1998.

- With regard claim 10, the admitted prior art of the instant application and Yamano et al. teach all subject matter as described above except for specifically teaching that the arrangement further contains means to receive a description of said at least one respective carrier subset, and means to interpret said description of said at least one respective carrier subset.

However, the section 9 of the ADSL Standard Specification Release 2 entitled 'Network and Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface', published by the American National Standards Institute (ANSI) under the reference ANSI T1.413-1998 teaches that the arrangement further contains means to receive a description of said at least one respective carrier subset, and means to interpret said description of said at least one respective carrier subset (section 9.9.14, pages 127) in order to improve the transceiver initialization. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the apparatus as taught by the section 9 of the ADSL Standard Specification Release 2 entitled 'Network and Customer Installation Interfaces - Asymmetric Digital Subscriber Line (ADSL) Metallic Interface', published by the American National Standards Institute (ANSI) under the reference ANSI T1.413-1998 in which, the arrangement further contains means to receive a description of said at least one respective carrier subset, and means to interpret said description of said at least one respective carrier subset, into the admitted prior art of the instant application and Yamanos' arrangement in order to improvement the transceiver initialization.

Allowable Subject Matter

9. Claims 6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. References US 6,073,151 and US 5,914,985 are cited because they are put pertinent to the demodulator with interpolation. However, none of references teach detailed connection as recited in claim.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M Wang whose telephone number is (571) 272-3053. The examiner can normally be reached on 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang



SHUWANG LIU
PRIMARY EXAMINER